

Vehicle Cover System

by

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BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

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The present invention relates generally to vehicle covers and more particularly to vehicle protective covers.

BACKGROUND ART

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Covers are typically used to protect vehicles from the weather and conditions such as storms, rain, snow, hail, sun, wind, wind carrying detritus, sand storms, hurricanes, atmospheric borne environmental hazards, and the like, and to protect the vehicles during storage. The covers are used to protect the vehicles and the vehicles' finishes 20 from the elements and to keep the vehicles clean for their next use.

Covers of soft flexible material have been used to protect automobiles, recreational vehicles, campers, trailers, trucks, vans, boats, airplanes, and the like, and are typically manufactured in many different sizes and shapes to accommodate the large variety of sizes and shapes required to fit the many different types of vehicles, and sizes and shapes of those vehicles to be covered. As a result, a manufacturing and inventory burden has been placed on the manufacturers of such covers, and as new vehicle models come out each year, an ever increasing load is being placed on these manufacturers to manufacture and inventory an ever increasing variety of sizes, shapes, and types of covers, resulting in increasing costs being passed on to consumers.

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Although there have been some attempts made to decrease the number of covers required for the large variety of sizes and shapes of vehicles, none of these attempts have been satisfactory in decreasing the manufacturing and inventory burden on suppliers, including skilled labor requirements to manufacture the large variety of covers, large and expensive inventories, and the resulting increase in costs, which have been passed on to consumers.

15 Attempts to resolve these issues for recreational vehicles have been to manufacture many differently sized covers to fit the many different sized vehicles in use. Attempts at “semi universal” covers have resulted in covers that fit some vehicles, but do not fit all vehicles well and/or do not fit certain vehicles at all. Even with this “semi

universal" approach, the sellers of covers are still required to manufacture and inventory a large number of covers to address their customers' needs.

A typical recreational vehicle, for example, may range from eighteen feet long to as 5 long as thirty six feet. Such covers are typically manufactured in lengths from eighteen feet to thirty six feet in two foot increments, thus requiring ten different size covers to cover the eighteen to thirty six foot vehicle length range. The most popular vehicles may, however, be addressed with eight different sizes. Current applications, however, require as many as 43 different sizes covers to fit the different types and sizes of 10 vehicles.

A vehicle cover system is needed, which minimizes the number of covers required to be manufactured and inventoried, and which fits substantially all the recreational vehicles currently in use and projected to be in use for the foreseeable future. The vehicle cover 15 system should have a minimum number of different component parts for simplicity of manufacturing, and to minimize cost and inventory requirements. The vehicle cover system should be long lasting, durable, easy and simple to install, and manufacture.

Vehicles, such as recreational vehicles, are often stored for extended periods of time, 20 and are typically used only 30 days in a 12 month period, with the vehicle stored or parked for 300 days or more during the year, which present additional challenges. Each of the covers must fit reasonably close and conform to the shape and size of the vehicle

being covered, and, be held onto the vehicle to keep the cover from moving during windy conditions, which force the cover to beat against and damage the vehicle's surface, or be blown off and lost, as the vehicle is left sitting and unattended. An ill fitting cover that moves, when it is not supposed to acts as an abrasive, and may 5 damage not only the vehicle's finish, but accelerate wear of the cover.

Attempts to decrease buffeting of the covers against the vehicles have been to fasten straps to the bottoms of the covers on opposing sides of the covers adjacent opposing sides of the vehicles, and fasten ropes to the straps on the opposing sides of the covers, 10 the ropes extending under the vehicles to the straps on the opposing sides of the vehicles. While this may keep the covers from being blown off the vehicles completely, the covers still move during windy conditions, fill with wind and billow, or parachute, and move excessively, which results in accelerated and excessive wear to the vehicles' surfaces and the covers, and abrasion of, and damage to the vehicles.

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The vehicle cover system should minimize abrasion and damage to a vehicle that the vehicle cover system is installed on, and minimize wear to the vehicle cover system.

A user should be able to easily enter and exit his or her vehicle, when the vehicle is 20 covered, the user being able to fully or partially pull back or remove a portion of the cover, and be able to open a door of the vehicle for entry and exit.

Manufacturers have incorporated zippered or hook and loop fastened doors into the covers for vehicle entry and exit. However, door placement varies greatly from one model to the other of the same vehicle manufacturer, with the variation between 5 manufacturers resulting in an extremely large variation of door locations. To locate and incorporate the door into the cover at the proper location for a particular vehicle has required a “custom made” cover with specified, custom entry door placement. Some cover manufacturers place two very large zippered access panels on a side of the cover to allow a “universal” entry panel; which while allowing door placement for multiple 10 vehicles, it presents the problem of a very large and unwieldy piece of material to unzip and secure, by one or two persons on a ladder.

The vehicle cover system should facilitate easy entry and exit to the vehicle.

15 There is thus a need for a vehicle cover system, which minimizes the number of covers required to be manufactured and inventoried, and which fits substantially all the recreational vehicles currently in use and projected to be in use for the foreseeable future. The vehicle cover system should have a minimum number of different component parts for simplicity of manufacturing, and to minimize cost and inventory 20 requirements. The vehicle cover system should minimize abrasion and damage to a vehicle that the vehicle cover system is installed on, and minimize wear to the vehicle cover system. The vehicle cover system should be long lasting, durable, easy and

simple to install, and manufacture. The vehicle cover system should be long lasting, durable, easy and simple to install and manufacture, and facilitate easy entry to and exit from the vehicle.

5 Different vehicle covers have heretofore been known. However, none of the vehicle covers adequately satisfies these aforementioned needs.

U.S. Patent No. 4,041,999 (Miller) discloses a vehicle protector, which utilizes a plurality of plastic sheets each having one surface thereof covered with a soft 10 resilient material. The soft sides of the sheets are disposed covering the outermost surface of the front fenders, the front door panels and the remaining side panels of a motor vehicle. The sheets are cut so as to have their marginal edges substantially conform to the marginal edges of the portions of the vehicle which they are adapted to cover. A pair of elastic bands straddles the front 15 grille portion of the vehicle and is secured to the leading marginal edges of the pair of sheets covering the front fenders. Another pair of elastic members joins the pair of sheets covering the front fenders residing on the hood of the vehicle. Snap fasteners secure the trailing edge of the front fender cover sheets to the body of the vehicle adjacent the leading edge of the front doors. Another pair of 20 sheets covers the front doors and is adapted with openings accommodating door handles and side view mirrors. The cover sheets for the doors utilize snap fasteners to secure to the leading edge of the front doors and hook-like plastic

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members to secure the remaining marginal edges of the door cover sheets by capturing portions of the marginal edges of the front doors. A third pair of sheets cover the remaining side panels of the vehicle utilizing plastic hook-like members to capture portions of the marginal edges of the remaining side panels and a third pair of elastic bands, joining to each of the third pair of cover sheets straddling the rear portion of the vehicle.

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U.S. Patent No. 4,589,459 (Lantrip) discloses a vehicle protective cover, which includes a front portion having a front panel, attached hood panel and front side panels. The hood panel and front side panels are adapted to allow them to be detachably connected along the outside edge of the hood panel, thereby providing essentially continuous coverage of the hood and lower front side walls of the vehicle. The front side panels extend backwardly beyond the rear edge of the vehicle doors to overlap with a rear portion of the cover. The rear portion of the protective cover includes rear side panels, which extend down the rear exterior side walls of the vehicle. The rear side panels are preferably connected together at the rear, and are provided with adjustment, so that the rear side panels can be drawn taut against the vehicle. Intermediate portions can also be included where the vehicle being protected includes four doors. Fasteners can be advantageously used at points about the wheel wells and lower edges of the side panels to help secure the protective cover on the vehicle.

U.S. Patent No. 6,491,335 (Cohill) discloses an automobile body cover for positioning over an automobile body. The automobile body cover has a plurality of individual covers that together completely cover the automobile body. The body cover includes a front cover, a rear cover, a front middle cover, and a rear middle cover. Each cover fits over the corresponding part of the automobile. Each cover has an inner layer and an outer layer, an open bottom end, and a bottom edge. The layers are bound together at the bottom edge. When in place over the automobile, the inner layer rests against the automobile body. A plurality of C-shaped hooks extend downward from the bottom edges of the covers. These hooks secure the covers in place under the automobile. A plurality of magnets are positioned along the cover bottom edges, between the inner layer and the outer layer.

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U.S. Patent No. 5,915,399 (Yang) discloses a multipurpose cover for a car, including a roof sunshade for covering the roof of the car, four screen-like knitting fabrics for separately covering the windshield, the rear window, and side windows of the car, four side sunshades for covering a front, a rear, and two side parts of the car, and four roll-up sunshades for covering the four screen-like knitting fabrics. The sunshades or fabrics are sewed together to form a complete cover for car. The roll-up sunshades are provided at their two lateral sides with zippers and at lower edges with hooks connected to the roll-up sunshades by means of elastic bands. Two of the screen-like knitting fabrics covering two sides of the car and their corresponding side sunshades have a

vertical split at their middle portion. Zippers are sewed to these splits to facilitate opening of doors via the splits. The cover for the car serves to block sunlight and snow, and keep out mosquitoes and flies.

5 U.S. Patent Nos. 6,302,469 and 6,010,176 (Jones) disclose a reversible soft cover for trucks, trailers, and other vehicles. The cover contains a central upper portion, and front, rear, and side portions extending from the central portion to completely enclose a bed or cargo area. Each of the front, rear, and side portions may be individually opened, and the rear section may be rolled-up from either inside or outside the vehicle using a lanyard. Flap covers prevent the hemmed side edges of the front, rear, and side portions from exposure, regardless of which surface is exposed, and provide a substantially weatherproof seal between panels.

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15 U.S. Patent No. 4,671,203 (Sanburg) discloses a boat supported duck blind, for mounting on the gunwales of a boat hull, which includes separate bow, stern and central frame sections adapted for use on various size boats. Camouflage designed cover sections with windows are provided for each frame section, and are removably connected by zippers to provide a cover over the entire boat.

20 Desired access points or shooting stations from the boat to the outside are obtained by the strategically arrangement of zippered fasteners. A reticulated camouflage type curtain is arranged inside the cover sections to provide concealment for the hunter when designated cover sections are unzipped. A

separate zippered section in the central cover provides ingress and egress for the
5 hunter's dog, and the reticulated curtain can be arranged by appropriate
zippering to provide an enclosure about the dog's station within the boat, to
protect the hunter from water spray when the dog returns to the boat from the
water and shakes itself off. The frame sections are of a knockdown
construction for ease of handling and storage, and are adjustable to provide a
fully erected cover, an open bow or stern section of the boat, separately or
simultaneously, a tarp-type closure for the bow or stern section of the boat,
separately or simultaneously, a full open boat with the cover sections folded
10 down and a tarp-like enclosure for the entire boat for storage or trailering. The
boat can be trailered with the cover fully erected for which an auxiliary bow
cover support is provided.

U.S. Patent No. 4,952,007 (Shahrokh) discloses a transportation vehicle cover
15 and refastenable exterior connecting system, which includes a cover for
covering a vehicle used to transport people and a releasable connecting system,
which releasably connects the cover to the vehicle at the outside of the vehicle.
The cover is a flexible sheet that is sized and shaped to cover exterior surfaces
20 of the passenger compartment of the vehicle. Opaque and reflective qualities of
the cover prevent the compartment from getting uncomfortably hot or damaged
from exposure to summer sun, and use of the cover during winter shields the
vehicle's windows from ice and snow. The cover and connecting system also
serve to deter and resist entry of unauthorized persons into the vehicle.

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U.S. Patent No. 4,968,085 (Stann) discloses a truck bed cover for covering and protecting loads of varying height. The cover includes a generally rectangular center section of a size adapted to cover the truck bed, surrounded by four outwardly-extending panels or flaps. Each of the flaps is provided with a series of connectors designed to mate with compatible elements located on the truck bed sides. The connectors are arranged on the panels such that the panels may be folded to provide various effective heights for the cover, the folded portions of the panels being maintained in position by complementary fasteners located on the cover.

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U.S. Patent No. 6,655,726 (Bergeron) discloses a retractable tarpaulin that can cover the cargo of truck, either partially or entirely. This system comprises a pair of posts that slide in notches at the periphery of a trailer flat bed, at the desired position according to the size of the cargo to cover. The width is also adjustable and includes an overhang of up to 12" on either side. The length may be reduced or extended at both front end and aft end if needed. The height of these posts can be adjusted to adapt to the cargo. A series of cables covers the distance from one post to the other to support the tarpaulin, and a drum arrangement stretches the cables to provide tightness to support the tarpaulin. As the tarp is retracted, a number of rings attached to the tarp are successively engaged in a cantilever hanger to keep the tarp in a small storage, when not in use.

U.S. Patent No. 5,605,369 (Ruiz) discloses a protective cover for a vehicle, which includes a main section, a door section, and a secondary section. The vehicle may be operated when the protective cover is installed upon the vehicle.

5 The protective cover includes window screen elements that cover the vehicle windows and light fixture screen elements that cover the vehicle headlights and taillights. The protective cover also includes a flap section that covers the door seam formed around the door and a second flap section that covers the seam formed between different body sections of the vehicle. The door section is

10 secured to the vehicle door with a drawstring that is tightened around the perimeter of the door, and includes a door handle access panel and a side view mirror opening.

U.S. Patent No. 5,788,317 (Nation) discloses a dual paneled golf cart enclosure for all weather having a plurality of pairs of inner panels and outer panels, which may be a combination of either mesh and plastic vinyl or plastic vinyl and plastic vinyl panels, some of the plastic panels being transparent. The panels are attached to and suspended from an enclosure top panel over a roof of a golf cart. The pairs of panels may cover both sides of the golf cart as well as

15 the front and back of the golf cart as desired and necessary. Depending on weather and use conditions, either or both pairs of panels may be secured in a rolled-up position around a perimeter of the golf cart roof by means of panel-holding straps wrapped around the rolled-up panels and attached to the panel-

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holding straps between each pair of panels using snaps or other fasteners. A roll cover to protect the rolled-up panels from sun and other elements may be provided by an extension of the top panel or a separate valance. A plurality of combinations of hook straps and/or buckles secure the enclosure and panels to the golf cart. Using a pair of inside screened or mesh panels inside outer plastic panels allows the plastic panels to be rolled-up, while the meshed panels are in a down suspended position, so that the occupants are protected from insects, but remain cooler than in standard golf cart enclosures with only plastic panels.

5 Alternatively, the outer panel may be used as a storage cover for the golf cart, when the cart is stored during off-season.

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U.S. Patent Nos. 5,820,196 and 5,845,958 (Rudys, et al.) disclose a motor vehicle transport cover, which is made of a vapor permeable, water impermeable, synthetic nonwoven sheet. The transport cover includes a mechanism for firmly attaching the nonwoven sheet in a position on a motor vehicle that covers substantially all of the roof, hood, and front bumper fascia of the vehicle and remains attached at air speeds along the major axis of the vehicle of at least 50 mph. The attachment mechanism is releasable, and it leaves substantially no visible adhesive residue on the vehicle at the moment the nonwoven sheet is removed from the vehicle. In U.S. Patent No. 5,820,196, the transport cover does not significantly inhibit access to the covered vehicle, and it does not obstruct the view of a driver of the covered vehicle. The transport cover has a front sheet piece made to cover the hood of the covered vehicle and

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a top sheet piece made to cover the roof of the covered vehicle. Where the covered vehicle is a sedan, the transport cover may also cover the trunk and rear bumper of the vehicle. In U.S. Patent No. 5,845,958, the transport cover may be a unitary cover that covers substantially all of the finished surfaces of a covered vehicle. The transport cover does not prevent driver access to a covered vehicle, and it does not unduly obstruct the view of a driver of the covered vehicle.

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U.S. Patent No. 6,340,198 (Benites, et al.) discloses a multi-part and multi-function cover for selective portions of a vehicle. The cover includes a cover member that covers the selective portions of the vehicle, fastening apparatus that is associated with the cover member and fastens the cover member on the selective portions of the vehicle, and a bag that stores the cover member when not in use. The cover member includes a lower portion that covers the pair of front fenders of the vehicle, the hood of the vehicle, the at least one door of the vehicle, the pair of rear quarter panels of the vehicle, and the trunk lid of the vehicle. The cover member also includes an upper portion that is independent from the lower portion of the cover member, and covers the roof of the vehicle, the front windshield of the vehicle, the rear windshield of the vehicle and the at least one side window of the vehicle. When the vehicle is a convertible and the roof of the vehicle is down, the upper portion of the cover member also functions as a tonneau cover that protects the interior of the vehicle.

U.S. Patent No. 6,273,493 (Woo) discloses a vehicle cover system, comprising
a hood cover segment for covering the hood of a vehicle; a roof cover segment
for covering the roof of the vehicle; and a trunk cover segment for covering the
trunk door of the vehicle. By deploying and installing the cover segments on
the hood, roof, and trunk door of the vehicle respectively, the mounting
5 operation of the vehicle cover system as a whole is completed and it is possible
to protect the vehicle body and paint finish thereon.

U.S. Patent No. 6,220,648 (Daniel) discloses a hail protective shield, which
10 consists of a laminated design, having multiple layers of resilient shock-
absorbing material for padding, strength and shape. An outer layer of high
density polyethylene ("HDPE") mesh is layered with closed cell foam to
produce a 2-ply covering material. In a preferred embodiment, a thin vinyl
scrim or polyethylene sheet is layered between the HDPE mesh and the closed
15 cell foam to provide a 3-ply covering material. The shield is constructed of two
generally rectangular top panels affixed to each other along their common
longest sides, each top panel being flanked by generally trapezoidally-shaped
side panels. The seams between the panels are preferably constructed using a
sewing technique that produces a reflexive joint between the panels, tending to
20 fold the panels towards each other, and giving the over all hail shield a reflexive
tendency to "grip" the car to increase the attachment security of the shield. The
outer edges of the panels are bordered by sleeves through which elastic shock
cords pass. Hooks affixed to the ends of the shock cords provide means for

attachment to the car's exterior at points such as holes in wheels or wheel covers. The design of the car shield allows for substantially compact folding and rolling of the shield for relatively convenient storage in a duffle-type bag in the car trunk, when not in use.

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U.S. Patent No. 6,099,067 (Butterworth) discloses a vehicle transport cover that protectively overlays the painted exterior surfaces of a vehicle. The cover includes a base sheet made of a moisture-resistant material that overlays the vehicle. An elastic strip that circumferentially extends along the vehicle 10 encircling the bottom edge of the base sheet holds the vehicle cover in place and ensures a substantially tight fit over the vehicle. Openings provided in the base sheet and which overlay all the vehicle windows are covered by transparent window sheets that promote driver visibility. A zippered slit is also provided in the cover along the base sheet region, which is aligned over the driver-side door 15 to allow easy access to and from the driver seat when the cover is arranged over the vehicle.

U.S. Patent No. 4,179,152 (Kent, Jr.) discloses a method and apparatus for securing fabric tops to a vehicle. The method and apparatus includes wind- 20 proofing during inclement weather the connecting edges of a fabric top deployed on four-wheeled vehicles, wherein the fabric top is conventionally secured to the frame of the vehicle by way of various fasteners, the interspaces between such fasteners being further secured by pile strips mounted on semi-

rigid material adhesively attached to the vehicle. The corresponding segments of the fabric top are similarly provided with overlying loop strips sewn to the fabric, the loop engaging the pile in a manner similar to that achieved by the material structure commonly sold under the mark "VELCRO." It is intended to dispose such attachment strips at the wind-receiving locations in the vehicle, such as for example, at the leading edge of the door and at the attachment edges of the top.

5 U.S. Patent No. 5,388,702 (Jones) discloses a pallet jacket, which is adapted to fit over and secure cargo to a base, such as an aircraft cargo pallet. The pallet jacket includes a cover having a central section and extending side flaps. The vertical lengths of the side flaps are preferably controllably adjustable. Separate securing straps are used to secure the cover over cargo and to a base. The securing straps are held proximate and in a sliding relation to the cover by strap keepers and lateral tension straps. The lateral tension straps are releasably connectable to form one or more continuous bands around portions of the cargo. The 10 securing straps are held proximate and in a sliding relation to the cover by strap keepers and lateral tension straps. The lateral tension straps are releasably connectable to form one or more continuous bands around portions of the cargo. The 15 In preferred embodiments, the cover includes a windowed receptacle for retention and display of items upon the outside of the cover.

20 U.S. Patent No. 5,738,403 (Tyson) discloses a vehicle protective cover, which includes a plurality of lightweight separable panels, each having an inner layer, a thicker shock absorbing center layer, and a substantially thinner outer layer, which defines a skirt having plural spaced-apart tie-down lines for securing the

cover on the vehicle with the skirt disposed extending from the vehicle in a tensioned, stand-off position.

U.S. Patent No. 6,588,827 (Heiland) discloses a protective cover for motor vehicles, machines, or the like, for surface protection against abrasive or chemical emissions, and moisture, caused by condensation, water logging and penetrating moisture, and against mechanical damage, during parking, storage and transportation. Partial covers for surfaces needed for visibility and partial covers for doors, which can be opened and closed, are also disclosed. The covers can be anchored at the underbody of the vehicles and/or snapped in at various locations.

U.S. Patent No. 4,289,346 (Bourgeois) discloses a collapsible and extendable protective cover mechanism for storage areas, which includes a pair of elongated guide tracks positioned in parallel relation on either side of the area to be protected. A plurality of cover segments, each having side portions interconnected by a top portion are positioned with the lower extremities of the side portions in guided engagement with the elongated track means. A power actuator system is interconnected with at least one of the cover segments, and, when energized, causes simultaneous movement of the side portions of at least one of the segments, causing the protective cover mechanism to move toward a collapsed position, where a majority of the area is exposed or an extended position where substantially all of the area is covered and protected. A single

drive motor of the power actuator mechanism functions through a chain drive, to cause simultaneous rotation of threaded members that are secured at either side of the area to be protected. An internally threaded connecting element is received by the rotatable threaded elements, and is movable linearly upon rotation of the threaded elements. Threaded pins establish connection between the lower portions of at least one of the cover segments and the linearly movable connector element, thus resulting in linear movement of the cover segments upon selective energization of the drive motor.

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10 For the foregoing reasons, there is a need for a vehicle cover system, which minimizes the number of covers required to be manufactured and inventoried, and which fits substantially all the recreational vehicles currently in use and projected to be in use for the foreseeable future. The vehicle cover system should have a minimum number of different component parts for simplicity of manufacturing, and to minimize cost and

15 inventory requirements. The vehicle cover system should minimize abrasion and damage to a vehicle that the vehicle cover system is installed on, and minimize wear to the vehicle cover system. The vehicle cover system should be long lasting, durable, easy and simple to install and manufacture, and facilitate easy entry to and exit from the vehicle.

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SUMMARY

The present invention is directed to a vehicle cover system, which minimizes the number of covers required to be manufactured and inventoried, and which fits 5 substantially all the recreational vehicles currently in use and projected to be in use for the foreseeable future. The vehicle cover system has a minimum number of different component parts for simplicity of manufacturing, and to minimize cost and inventory requirements. The vehicle cover system minimizes abrasion and damage to a vehicle that the vehicle cover system is installed on, and minimizes wear to the vehicle cover 10 system. The vehicle cover system is long lasting, durable, easy and simple to install and manufacture, and facilitates easy entry to and exit from the vehicle.

A vehicle cover system having features of the present invention comprises: removably attachable mating cover portions adapted to cover a vehicle, the vehicle having a top, a 15 bottom, opposing sides; a front end, and a rear end; each the removably attachable mating cover portion removably attached to and mating with at least one adjacent one of the removably attachable mating cover portions; the removably attachable mating cover portions comprising: at least one substantially U shaped cover portion adapted to cover a portion of the top and an adjacent portion of each of the opposing sides of the 20 vehicle; front and rear end portions adapted to cover the front end and the rear end of the vehicle, respectively; the at least one substantially U shaped cover portion having a length selected from the group consisting of a first length, a second length, and a third length.

DRAWINGS

These and other features, aspects, and advantages of the present invention will become
5 better understood with regard to the following description, appended claims, and
accompanying drawings where:

FIG. 1 is an exploded view of a vehicle cover system, constructed in accordance
with the present invention;

FIG. 2 is a perspective view of a vehicle having an elongated mid section;

10 FIG. 3 is an exploded view of the vehicle cover system configured for an alternate
vehicle;

FIG. 4 is an exploded view of the vehicle cover system configured for an alternate
vehicle;

FIG. 5 is an exploded view of the vehicle cover system configured for an alternate

15 vehicle;

FIG. 6 is a perspective view of a vent of the vehicle cover system; and

FIG. 7 is a perspective view of an alternate embodiment of a vehicle cover system
for an alternate vehicle.

DESCRIPTION

5 The preferred embodiments of the present invention will be described with reference to FIGS. 1-7 of the drawings. Identical elements in the various figures are identified with the same reference numbers.

FIG. 1 shows an embodiment of the present invention, a vehicle cover system **10** 10 comprising removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, removably attachable mating front end cover portion **18**, and removably attachable mating rear end cover portion **20** adapted to cover a vehicle **22**, shown in FIG. 2. The vehicle cover **10** is shown unfolded and erected in the exploded perspective view of FIG. 1.

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The vehicle has a top **22**, a bottom **24**, opposing sides **26** and **28**, a front end **30**, and a rear end **32**. The vehicle cover system **10** may have one or more of the removably attachable mating substantially U shaped cover portions **12** and optionally one or more of either or both of the removably attachable mating substantially U shaped cover portions **14** and **16**, depending on length **34** of the vehicle **22**. Recreational vehicles, trailers, campers, busses, vans, and the like often have box-like structures, having an elongated mid section **35**, the front and rear ends **30** and **32**, respectively, the top and

the bottom **22** and **24**, respectively, as shown in FIG. 2, the front and rear ends **30** and **32**, respectively, having exterior shapes which are similar or substantially the same.

The removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** are adapted to cover portions of the top **22** and adjacent portions of the opposing sides **26** and **28** of the vehicle **22**. The removably attachable mating front end cover portion **18** and the removably attachable mating rear end cover portion **20** are adapted to cover the front end **30** and the rear end **32** of the vehicle **22**, respectively.

- 10 The removably attachable mating front and rear end cover portions **18** and **20**, respectively, are matingly removably attached to an adjacent one of the removably attachable mating U shaped cover portions **12**, **14**, and **16**. The removably attachable mating U shaped cover portions **12**, **14**, and **16** are matingly removably attachable one to the other and to the removably attachable mating front and rear end cover portions **18** and **20**, respectively, one to the other. The vehicle cover system **10** may have one or more of the removably attachable mating substantially U shaped cover portions **12** and optionally one or more of either or both of the removably attachable mating substantially U shaped cover portions **14** and **16**, depending on length **34** of the vehicle **22**, the vehicle cover system **10** fitting a substantially unlimited variety, number and types of the vehicle **22**.

The removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** are substantially the same as one another, except that the removably attachable mating

substantially U shaped cover portion **12** has a first length **36**, the removably attachable mating substantially U shaped cover portion **14** has a second length **38**, and the removably attachable mating substantially U shaped cover portion **16** has a third length **40**. The removably attachable mating front end cover portion **18** and the removably attachable mating rear end cover portion **20** have lengths **42** and **44**, respectively. The front end and rear end portions **18** and **20**, respectively, are preferably substantially the same as one another, but may be different one from the other depending on the shapes of the front and rear ends **30** and **32**, respectively, of the vehicle **22**. The vehicle **22** has the length **34**.

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The removably attachable mating U shaped cover portions **12**, **14**, and **16** for any particular application are selected from an inventory group of the removably attachable mating U shaped cover portions **12**, **14**, and **16** having the first length **36**, the second length **38**, and the third length **40**, respectively, to fit the vehicle **22** of substantially any length **38**.

A combination of the removably attachable mating U shaped cover portions **12**, **14**, and **16** may be used to cover the vehicle **22** of substantially any length, although certain ones of the removably attachable mating U shaped cover portions **14** and **16** may not be required for a specific vehicle **22**, depending on the vehicle's length **34**, or more than one of any particular one of the removably attachable mating U shaped cover portions **12**, **14**, and **16** may be used depending on the length **34** of the vehicle **22**.

The vehicle cover system **10** may, thus, be used to cover the vehicle **22** of substantially any length **34**, using one or more of the removably attachable mating substantially U shaped cover portions **12** and optionally one or more of either or both of the removably attachable mating substantially U shaped cover portions **14** and **16** to cover the

5 elongated mid section **35** of the vehicle **22**, the removably attachable mating U shaped cover portions **14** and **16** being incorporated into the vehicle cover system **10** as required to cover the vehicle **22** of a particular length **34**, the vehicle cover system **10** requiring a minimum of different component parts to be manufactured and inventoried to meet substantially all customer needs.

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For most manufacturing and inventory applications, the first length **36** is determined by subtracting the lengths **42** and **44** of the removably attachable front end and rear end cover portions **18** and **20**, respectively, from the length **34** of the vehicle **22** and adding tolerance of fit required for covering the shortest vehicle **22** for which a vehicle

15 cover manufacturer expects to manufacture and inventory the vehicle cover system **10**.

The second length **38** may be a fraction of the first length **36**, and the third length **40** may be a fraction of the second length **38**. For most applications, the third length **40** is typically chosen to be one-half the second length **38**, although other suitable fractional relationships may be used. The third length **40** may alternatively be a fraction of the

20 first length **36**. Other suitable relationships between the first, second, and third lengths **36**, **38**, and **40**, respectively, may be used.

The removably attachable mating substantially U shaped cover portion **16** has the third length **40**, which is the shortest length of the first, second, and third lengths **36**, **38**, and **40**, respectively, of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, respectively. For most manufacturing and inventory applications, the third length **40** may be selected as the maximum length that facilitates a reasonable fit between the expected lengths **34** of different ones of the vehicles **22**.

For typical practical applications, the second length **38** is typically selected to be four feet, and the third length **40** is typically selected to be two feet. The lengths **42** and **44** of the removably attachable mating front end and rear end cover portions **18** and **20**, respectively, are typically selected to be one foot each. For different ones of the vehicles **22** having the length **34** ranging from eighteen feet to thirty six feet, the first length is typically selected to be sixteen feet. Different ones of the vehicles **22** having their lengths **34** ranging from eighteen feet to thirty six feet can then be easily outfitted with: the removably attachable mating front end and rear end cover portions **18** and **20**, respectively, having the lengths **42** and **44**, respectively, of one foot each; the first length **36** of the removably attachable mating substantially U shaped cover portions **12** of sixteen feet; the second length **38** of the removably attachable mating substantially U shaped cover portions **14** of four feet; and the third length **40** of the removably attachable mating substantially U shaped cover portions **16** of two feet; the removably attachable mating substantially U shaped cover portions **14** and **16** being used as required to make up the difference of lengths **34** between the shortest expected length **34** of eighteen feet and the longest expected length **34** of thirty six feet of the vehicle

22. If the front and rear ends **30** and **32**, respectively, of the vehicle **22** have substantially the same shape, then the removably attachable mating front end cover portion **18** and the removably attachable mating rear end cover portion **20** may be substantially the same.

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From a manufacturing and inventory perspective, then, most, if not all, of the manufacturing and inventory requirements for the vehicles **22** can be satisfied with just the three lengths of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, i.e., the first, second and third lengths **36**, **38**, and **40** and just 10 one length of the removably attachable mating front end and rear end cover portions **18** and **20**, respectively, i.e., the lengths **42** and **44** being substantially the same, and the removably attachable mating front end and rear end cover portions **18** and **20**, respectively, being substantially the same. Thus, only four different covers need be manufactured and inventoried to cover the broad spectrum of the lengths **34** and types 15 of the vehicles **22** on the market and expected to be on the market for the foreseeable future.

FIG. 1 shows the vehicle cover system **10** configured having the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front end and rear end cover portions **18** and **20**, respectively. FIGS. 20 3-5 show the vehicle cover system **10** configured for ones of the vehicle **22** having alternate lengths **34**, to illustrate some possible configurations, although other configurations are also possible. FIG. 3 shows the vehicle cover system **10** configured

having the removably attachable mating substantially U shaped cover portions **12** and **14** and the removably attachable mating front end and rear end cover portions **18** and **20**, respectively. FIG. 4 shows the vehicle cover system **10** configured having the removably attachable mating substantially U shaped cover portions **12** and **16** and the 5 removably attachable mating front end and rear end cover portions **18** and **20**, respectively. FIG. 5 shows the vehicle cover system **10** configured having the removably attachable mating substantially U shaped cover portion **12** and the removably attachable mating front end and rear end cover portions **18** and **20**, respectively.

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The removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, the removably attachable mating front end cover portion **18**, and the removably attachable mating rear end cover portion **20** have seams **50** thereabout, which strengthen and reinforce the removably attachable mating substantially U shaped cover 15 portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively. A plurality of straps **52** having loops **54** are incorporated into the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, at different heights **56** and **58** of the seams **50**, which 20 facilitate fastening a plurality of elastic cords, or other suitable fastening means, thereto.

The straps **52** are fastened to the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, at the seams **50** to strengthen and reinforce

attachment of the straps **52** to the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, thereto. The elastic cords, or other suitable fastening means, are fastened to each of the straps **52** at the different heights **56** and **58** at the opposing sides **26** and **28** of the vehicle **22** and to hooks or other suitable fasteners at the bottom **24** of the vehicle **22**, which hold the vehicle cover system **10** to the vehicle **22**, and minimize movement of each of the substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, about the vehicle **22**, abrasion of the vehicle **22** and wear of the vehicle cover system **10** being minimized.

Each of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, the removably attachable mating front end cover portion **18**, and the removably attachable mating rear end cover portion **20** have zippers **60** thereabout, which facilitate fastening and removal of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, to and from one another, as required, and/or partial removal of a particular one or ones of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, to facilitate entry and/or exit at a door or doors of the vehicle **22**.

The zippers **60** having zipper pulls **61** are incorporated about each of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16**, the removably attachable mating front end cover portion **18**, and the removably attachable mating rear end cover portion **20** with the same orientation. The zippers **60** may start, for example,

5 at the left-hand, when viewed toward the front end cover portion **18** of the cover, and zip closed as they travel to the right-hand side of any particular one of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, or alternatively zip in the opposite direction; however, all the zippers **60** should zip in

10 the same direction for proper mating of any one of the removably attachable substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, with the other, as required.

15 Each of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, have color coded tags **62** for identification purposes of each of the components of the vehicle cover system **10** and at locations which identify orientation and alignment required for proper mating of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, and the zippers **60**, and to aid in manufacturing.

Each of the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, have vents **70**, shown in FIG. 6, which provide ventilation and
5 minimize moisture buildup between the vehicle cover system **10** and the vehicle **22**.

The vents **70** comprise holes **72** in the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, covered by screening **74**, which is covered by vent cover **76**, the vent cover **76** having top **78** and sides **80** of the vent **70**
10 fastened to the removably attachable mating substantially U shaped cover portions **12**, **14**, and **16** and the removably attachable mating front and rear end cover portions **18** and **20**, respectively, with bottom **82** of the vent **70** remaining open.

The vehicle cover system **10** may be of flexible, water resistant, and ultraviolet resistant
15 material, or other suitable material or combination thereof.

FIG. 7 shows an alternate embodiment of a vehicle cover system **100**, which is substantially the same as the vehicle cover system **10**, except that the vehicle cover system **100** is for a boat having an elongated mid section.

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Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. Therefore, the spirit

and scope of the appended claims should not be limited to the description of the preferred versions contained herein.